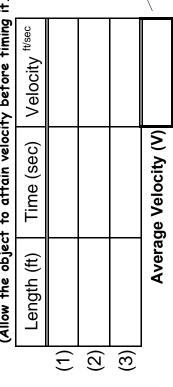
| Date: | С | itizens Qualit | tative Ha | bitat Eva | luation In | dex | CQHEI Total |
|--|---|--|---|--|--|-----------------------------|---|
| Vol [ID: | Site ID: | River Wate | and rshed: | | | | CQIILI IOIAI |
| _ | ıbstrate (Bottom | | | | | Sc | ore: |
| a) S | | i iype) | I h) | "Smotherin | a" I | c) "Siltin | |
| 14 pt | Mostly Large (Fist Size or Bigger) | Mostly Small (Single Than Fingernail, 6 pt Coarse, or Bedrick) | maller | Are Fist Size a Pieces Smoth O Sands/Silts? pt | and Larger | Are S Distr NO Streat | Silts and Clays ibuted Throughout am? |
| 10 pt | Mostly Medium (Smaller than Fist, but Bigger than Fingernail) | Mostly Very Fine Coarse, Sometii 0 pt Greasy or Muck | mes L | Large Piece S Black on Bo | Hard to Move es, Often ottom with Few | YES St | mptoms: Light Kicking Bottom Results in ibstantial Clouding of ream for More than a nute or Two |
| II. F | ish Cover (Hidin | g Places) - Add 2 | 2 Points Fo | r Each One | Present | Sc | ore: |
| 2 pt2 pt | Underwater Tree Roots (Large) Underwater Tree Rootlets (Fine) 2 | Backwaters, Oxbows or Side | Downed Logs, B 2 pt Shallow Areas fo 2 pt Small F | ranches 2 , Slow | pt Deep Areas (Chest Deep) | 2 pt | Undercut Banks Shrubs, Small Trees that Hang Close Over the Bank |
| III. S | tream Shape an | d Human Alterat | tions | | | Sc | ore: |
| a) " | Curviness" or " | Sinuousity" of C | hannel | b) How | Natural Is T | he Site? | |
| 8 pt . | 2 or More Good Bends | 1 or 2 Good Bend | ds | Mos | stly Natural | Cha 6 pt natu | ny Man-made nges, but still some iral conditions left ., trees, meanders) |
| 3 pt | Mostly Straight Some "Wiggle" | Very Straig | ht | ☐ Mar 9 pt (e.g | ew Minor n-made Changes ., a bridge, some ambank changes) | L Cha | vy, Man-made nges (e.g., leveed hannelized) |
| IV. S | Stream Forests 8 | Wetlands (Ripa | rian Area) | & Erosion | | Sc | ore: |
| , | Vidth of | b) Land Use - M | lostly: | c) Ba | nk Erosion - | d) Ho | w Much of |
| - | arian Forest & | Forest/Wetland | Illiade | ration Ty | pically: | Stre | am is Shaded? |
| We | tland - Mostly: Wide (Can't Throw | 5 pt Shrubs 4 pt | 2 pt Suburba | | table Hard or Well- egetated Banks | 3 | Mostly pt |
| 8 pt | A Rock Through/ Across It) Narrow (Can Throw | Overgrown Fields Fields | Row Cr | n | ombination of Stable nd Eroding Banks | | Partly pt |
| 5 pt | A Rock Through/ Across It) | Fenced Pasture 2 pt | Open P | | aw, Collapsing anks | 0 | None pt |
| 0 pt | None | Park (Grass) 2 pt | Urban/ Industria | al | | | |
| | epth & Velocity | _ | | | | | ore: |
| <u>a)</u> [| Deepest Pool is | At Least: | - | | | | (Add Points): |
| 8 pt | Chest Deep 4 pt | Knee Deep | Very Fast: Stand in th | e Current1 | Moderate: Slow Objects Downs pt | | None |
| 6 pt | Waist Deep 0 pt | Ankle Deep | Fast: Quic Objects Do | ownstream L | Slow: Flow Nearly Absent pt | | |
| VI. Riffles/Runs (Areas Where Current is Fast/Turbulent, Surface May Be Broken) Score: | | | | | | | |
| a) F | Riffles/Runs Are Knee Deep or Deeper & Fast | Ankle Deep or Less & Slow | b) | Riffle/Run S | Substrates A | Smaller Tha | an Your or Do Not Exist |
| 8 pt 6 pt | Ankle/Calf Deep & Fast | 4 pt Do Not Exist 0 pt | 7 pt | Smaller Than F but Larger Thar | | gomund | 20 |

Hoosier Riverwatch Stream Flow Calculation Worksheet Transect 3 (ft) Transect (Three measurements along each transect.) Transect 2 (ft) Transect #2 2. River Depth (Z) Transect 1 (ft) Transect #1 Depth (Z) Average $\overline{0}$ (3) (One measurement at each transect.) 1. River Width (W) Width (ft) Transect # Width (W) Average $\overline{\Xi}$ (3) $\overline{0}$

Stream Flow = Discharge (D)4 Surface Velocity(V) = Length/Time (Allow the object to attain velocity before timing it.) m .

200 ft

Ν



| dtn (vv) | epth (Z) | ocity (V) feet/sec | 9 or 0.8 | rge (D) $ft^3/s = (cfs)$ | |
|----------------|----------------|--------------------|---------------------|--------------------------|------------|
| Avg. Width (W) | Avg. Depth (Z) | Avg. Velocity (V) | *(n) = 0.9 or 0.8 | Discharge (D) | .+I. · V V |

Multiply $W \times Z \times V \times n = D$

*n is a constant indicating roughness of substrate - use 0.9 for sandy, muddy bottom

or bedrock; use 0.8 for gravel or rocky bottom

Unit Conversions
1 in = 0.0833 ft
1 m = 3.281 ft

Convert measurements of feet + inches to 10^{ths} of feet. **Example: 10 ft + 4 in = 10.33 ft.** (Multiply 4 inches x 0.0833 feet/inch = 0.3332 ft. Add this to 10 feet = 10.33 feet.)

| Chemical Monitoring Work Sheet | | | | | Air Temp °C | | |
|--|------------|---|----------|----------|---------------|--------|-------------|
| Time | Stream I | | | | Water Temp °C | | |
| Worst Woathor — | • | □ Overcast □ Showers □ Rain (Steady) □ Storm (Heavy) □ Overcast □ Showers □ Rain (Steady) □ Storm (Heavy) | | | | Lat °N | |
| | | Units | Sample 1 | Sample 2 | San | nple 3 | Average |
| Dissolved Oxyge | n (DO) | % Saturation mg/L | | | | | I |
| Avg DO (original) — DO after 5 days BOD 5-day (difference) | | mg/L | | | <u>=</u> | | |
| E. Coli Bacteria (purple/blue-violet c | colonies) | colonies/ 100 mL | | | | | |
| General Coliforms (pink/magenta color | | colonies/ 100 mL | | | | | |
| рН | | units | | | | | |
| Temp at Your — <u>Upstream (1 m</u> Temperature Cha | i) Temp | °C | | | | | |
| Orthophosphate | | mg/L | | | | | |
| Total Phosphate (add acid and boil for | or 30 min) | mg/L | | | | | |
| Nitrate (NO ₃) (after multiply by 4. | 4) | mg/L | | | | | |
| Nitrite (NO ₂) (after multiply by 3. | 3) | mg/L | | | | | |
| Transparency (from | m Tube) | cm | | | | | |
| Turbidity (from char in databas | | NTU | | | | | |
| Ammonia Nitroge | n | mg/L | | | | | |
| Other | | | | | | | |
| Other | | | | | | | |
| Other | | | | | | | |
| Other | | | | | | | |

CHEMICAL MONITORING DATA SHEET (WQI)

| MM DD YY End Time :: Certified Monitors' Names | Volunteer ID | | | | | | |
|---|---|--|--|--|--|--|--|
| Organization Name | | | | | | | |
| Watershed Name Watershed # Site ID Stream/River Name Site ID (Above ID numbers are required in the content of the cont | | | | | | | |
| Current Weather ☐ Clear/Sunny ☐ Overcast Weather in Past 48 hrs. ☐ Clear/Sunny ☐ Overcast | ☐ Showers ☐ Rain (Steady) ☐ Storm (Heavy) ☐ Showers ☐ Rain (Steady) ☐ Storm (Heavy) | | | | | | |
| WATER QUALITY INDEX (WQI) You may perform as many of the following tests as you wish; however, at least 6 must be completed to obtain a Total Water Quality Index value. Divide the total of the Calculation column by the total of the Weighting Factor column to obtain the Water Quality Index rating. Test Results Q-Value Weighting Calculation | | | | | | | |
| mg/L Dissolved Oxygen% saturation E. coli colonies/100mL | | | | | | | |
| pH units | X .12 = | | | | | | |
| B.O.D. 5mg/L H ₂ O Temp Change change in °C | | | | | | | |
| Phosphate mg/L Nitrate (NO ₃) mg/L | X .11 = X .10 = | | | | | | |
| TurbidityNTU's | X .09 = | | | | | | |
| Excellent 90 - 100% Bad 25 - 49% Good 70 - 89% Very Bad 0 - 24% Medium 50 - 69% WATER QUALITY INDEX RATING | | | | | | | |

BIOLOGICAL MONITORING DATA SHEET

| Date// | Begin Time:_ End Time:_ | | er ID | | | | |
|--|-------------------------|---------------------------------|----------|--|--|--|--|
| Organization Name | | | | | | | |
| Watershed Name | | Watershed # | | | | | |
| Stream/River Name Site ID (Please do not abbreviate.) (Above ID numbers are required) | | | | | | | |
| Check Methods Us | ed | Check Habitats Sa | mpled | | | | |
| Kick Seine Net (3 ti | imes) Riffles | Riffles Undercut Banks Sedir | | | | | |
| D-Net (20 jabs or s | scoops) Leaf Pa | cks Snags/Vegetati | on Other | | | | |
| POLLUTION TOLERANCE INDEX (PTI) PT GROUP 1 PT GROUP 2 PT GROUP 3 PT GROUP 4 Intolerant Moderately Intolerant Fairly Tolerant Very Tolerant | | | | | | | |
| Mayfly Nymph Caddis Fly Larvae Dobsonfly Larvae Riffle Beetle Water Penny Right-Handed Snail # Of TAXA Weighting Factors: (x 4) | d INDEX | Black Fly Larvae Planaria Leech | | | | | |
| Other Biological Indicators | | | | | | | |
| Native Zebra Rusty Aquatic % Algae Diversity Mussels Mussels Cravfish Plants Cover Index | | | | | | | |